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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/063,603

05/03/2002

Guanzhong Gao

124048

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07/01/2004

GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
SCHENECTADY, NY 12309

EXAMINER

LIEU, JULIE BICHNGOC

ART UNIT

PAPER NUMBER

2636

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/063,603

Applicant(s)

GAO ET AL.

Examiner

Julie Lieu

Art Unit

2636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9-18,21-24 and 26-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27-30 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,9,11-14 and 18 is/are rejected.
- 7) ☒ Claim(s) 5-7,10,15-17,21-24 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. This office action is in response to Applicant's amendment filed April 19, 2004. Claims 1, 3-5, 11, 12, 13, 15, 18, 21, and 28 have been amended. Claims 2, 8, 19, 20, 25, and 31 have been canceled.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The indicated allowability of claims 2-4, 9-10, 15-17, 19-20, 24, and 31 is withdrawn in view of the newly discovered reference(s) to JP 404034379. Rejections based on the newly cited reference(s) follow.

### *Claim Rejections - 35 USC § 103*

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory et al. (US Patent Application No. 2003/0151412)

#### Claim 18:

Gregory discloses a monitoring system comprising at least one partial discharge sensor 24, which is configured to monitor a component of a wiring system to acquire monitoring signal. Though the wiring system to be monitored in Gregory is not necessary use for an aircraft component. However, it would have been obvious to one skilled in the art to use the same

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concept in any environment as well as in an aircraft system because the function of the device is to detect partial discharge and its function would not thereby be modified.

Gregory shows only one unit. Nonetheless, it would have been obvious to one skilled in the art to use a plurality of monitoring units as desired because the multiplicity of the devices would not alter its functions.

Fig. 6 in Gregory shows a system equivalent to a data acquisition system, which is configured to receive the monitoring signal; and at least one hard-wired connector configured to connect the monitoring unit to the data acquisition system for conveying the monitoring signal. The monitoring system in Gregory comprises an in-line monitoring unit, wherein the component comprises a first wire set including at least one wire connected to a first connector, a second wire set including at least one wire connected to a second connector, and the monitoring unit is positioned between the first and second connector. See front page figure.

5. Claims 1, 3, 4, 9, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory et al. (US Patent Application No. 2003/0151412) in view of JP 404034379.

Claim 1:

Gregory discloses a monitoring system comprising at least one partial discharge sensor 24, which is configured to monitor a component of a wiring system to acquire monitoring signal. Though the wiring system to be monitored in Gregory is not necessary use for an aircraft component. However, it would have been obvious to one skilled in the art to use the same concept in any environment as well as in an aircraft system because the function of the device is to detect partial discharge and its function would not thereby be modified.

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It appears that the sensor in Gregory is not a capacitive sensor. Nonetheless, the use of capacitive sensor as a PD sensor which include conductive layer extending around a capacitance enhancing layer is old in the art as taught in JP'379. See abstract and front page figure. In light of this teaching, it would have been obvious to one skilled in the art to use a capacitive coupling sensor in the device of Gregory as taught in JP'379 because it is old, conventional in the art, and functionally equivalent to the sensor used in Gregory.

Claim 3:

The component in Gregory's is wire with a conductive core surrounded by an insulating layer, wherein the capacitive coupling sensor in the combined system of Gregory and JP'379 includes a capacitance enhancing layer 6 which extends around the insulating layer, and wherein the conductive layer 8 extends around the capacitance enhancing layer. See front page figure of the JP patent.

Claim 4:

The component in Gregory comprises a wire having a conductive core. However, it would have been obvious to one skilled in the art to use the sensor in the combined system of Gregory and JP'379 on component including a plurality of wires in the same fashion as it is used in a single wire because the function of the sensor would not thereby be modified.

Claim 9:

Gregory discloses a monitoring system comprising at least one partial discharge sensor 24, which is configured to monitor a component of a wiring system to acquire monitoring signal. Though the wiring system to be monitored in Gregory is not necessary use for an aircraft component. However, it would have been obvious to one skilled in the art to use the same

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concept in any environment as well as in an aircraft system because the function of the device is to detect partial discharge and its function would not thereby be modified.

The monitoring system in Gregory comprises an in-line monitoring unit, wherein the component comprises a first wire set including at least one wire connected to a first connector, a second wire set including at least one wire connected to a second connector, and the monitoring unit is positioned between the first and second connectors. See front page figure.

Claim 11:

The monitoring system in Gregory comprises an in-line monitoring unit which is a self-monitoring unit, wherein the component comprises a first wire set including at least one wire connected to a first connector, a second wire set including at least one wire connected to a second connector, and the monitoring unit is positioned between the first and second connector. See front page figure.

The monitoring unit in Gregory comprises a PD sensor wherein the PD sensor is configured to monitor the wire.

Claim 12:

The monitoring device in the combined system of Gregory and JP'379 includes a PD sensor. Fig. 6 in Gregory shows a system equivalent to a data acquisition system, which is configured to receive the monitoring signal; and at least one hard-wired connector configured to connect the monitoring unit to the data acquisition system for conveying the monitoring signal.

Claim 13:

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The monitoring device in the combined system of Gregory and JP'379 includes a PD sensor. The monitoring unit further comprises a transmitter, which is configured to transmit a monitoring signal.

Claim 14:

The data acquisition system in Gregory includes a receiver which is configured to receive the monitoring signal, and a memory which is configured to store the monitoring signal.

*Allowable Subject Matter*

6. Claims 27-30 is allowed.

7. Claims 5-7, 10, 15-17, 21-24, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Remarks*

8. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Lieu whose telephone number is 703-308-6738. The examiner can normally be reached on MaxiFlex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Hofsass can be reached on 703-305-4717. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Julie Lieu  
Primary Examiner  
Art Unit 2636

Jun 22, 04